

REMARKS

Claims 1-9 have been canceled without prejudice. Claims 10 and 11 have been added.
The specification has been amended.

The Examiner has objected to the disclosure because of an informality. Paragraph 0016 of the specification starting at page 7, line 4, and ending at page 8, line 3, of the specification has been amended to change “lectronic” to “electronic.” It is submitted that no new matter has been added. It is requested that the objection to the disclosure be withdrawn.

The Examiner has rejected applicant’s claims 1-3, 5-7 and 9 under 35 USC § 103(a) as being unpatentable over the Maruyama patent (US 6,130,994) in view of the Kishimoto et al. patent (US 5,895,128). The Examiner has rejected applicant’s claims 4 and 8 under 35 USC § 103(a) as being unpatentable over the Maruyama patent (US 6,130,994) in view of the Kishimoto et al. patent (US 5,895,128), and further in view of the Shimizu et al. reference (US 2003/0063905). With respect to applicant’s claims, as amended, these rejections are respectfully traversed.

In particular, applicant’s claims 1-9 have been canceled without prejudice and are replaced with new claims 10 and 11, which better define applicant’s invention. Specifically, new claim 10 recites a digital still camera that comprises a controller that controls an electronic flash which can change an irradiation angle at a time of a light emission, an image sensing device having a photoelectric conversion function, an optical zoom unit that drives a zoom lens based on focal length information, and an electronic zoom unit that performs enlarge processing on signals obtained by the image sensing device based on view-angle scaling information. Applicant’s claim 10 further recites that the controller controls the irradiation angle based on

the focal length information when the zoom lens has not reached a telephoto limit or a wide-angle limit, and controls the irradiation angle based on the view-angle scaling information when the zoom lens has reached the telephoto limit or the wide-angle limit.

In particular, applicant's claim 10 provides for, in a sense, two modes of control of the irradiation angle. In one mode, which is carried out when the zoom lens (i.e., the optical zoom lens) is not at either a telephoto limit or a wide-angle limit, the irradiation angle of the electronic flash is based on the focal length information, which is utilized by the optical zoom unit that drives the zoom lens. In a second mode, which is carried out when the zoom lens is at the telephoto limit or the wide-angle limit, the irradiation angle of the electronic flash is based on the view-angle scaling information, which is utilized by the electronic zoom unit that performs enlarge processing (i.e., an electronic zoom function).

Such a construction is not taught or suggested by the Maruyama patent, the Kishimoto et al. patent, or the Shimizu et al. reference, taken alone or in combination with one another.

The Maruyama patent discloses controlling both the optical zoom and electronic zoom of a camera in accordance with the angular position of a zoom ring 5. As described in column 5, line 37 through column 6, line 2 of the Maruyama patent, the focal length increases according to the rotation angle of the zoom ring, and when the zoom mechanism reaches its tele-end limit, the electronic zoom operation is carried out as the zoom ring further rotates. In operation, the optical focal length "is kept at the tele-end value" during the electronic zoom operation (col. 5, lines 46-53 and 59-63). Thus, when the optical zoom has reached its "tele-end limit," further magnification is carried out electronically without further modification of the optics within the camera described in the Maruyama patent. However, the Maruyama patent neither describes

nor is concerned with the control of an electronic flash, as acknowledged by the Examiner, and therefore this reference does not disclose the particular manner of controlling the irradiation angle of the electronic flash as recited in applicant's claim 10.

The Kishimoto et al. patent is concerned with controlling an electronic flash including, among other things, the emission time and projection angle of the electronic flash. In particular, the Kishimoto et al. patent teaches that the projection angle of the flash is controlled in accordance with the distance from the camera of the object being imaged (see column 6, lines 39 – 47). The Kishimoto et al. patent further describes using the object distance to control the projection angle of the flash in column 8, lines 58 to column 9, line 5. The Kishimoto et al. patent, however, does not entail controlling the projection angle of the flash in the manner recited in applicant's claim 10. In particular, the Kishimoto et al. patent does not have two modes of control, wherein the projection (i.e., irradiation) angle is based on focal length information when the zoom lens has not reached a telephoto limit or a wide-angle limit, and wherein the irradiation angle is based on the view-angle scaling information pertaining to an electronic zoom function when the zoom lens has reached the telephoto limit or the wide-angle limit.

In fact, the Kishimoto et al. patent is not concerned with electronic zoom at all and thus is silent as to how the flash is controlled during electronic zoom. Accordingly, since the Maruyama patent is not concerned with controlling the flash, in any sort of zoom mode, and the Kishimoto et al. patent is not concerned with electronic zoom at all, these references, even when combined, clearly would not result in a camera having a controller with the above-discussed features of applicant's claimed invention, i.e., a controller which controls the

irradiation angle based on the focal length information when the zoom lens has not reached a telephoto limit or a wide-angle limit, and controls the irradiation angle based on the view-angle scaling information when the zoom lens has reached the telephoto limit or the wide-angle limit.”

Further, the Kishimoto et al. patent controls the projection angle based on object distance, and not the angle of view. As would be appreciated by one of ordinary skill in the art, object distance and angle of view are two different things, where it is possible to take a picture of an object at a certain distance with both a wide-angle view (where the focal length of the zoom lens is short) and a telephoto angle view (where the focal length of the zoom lens is long), and visa versa. The present invention, however, does not employ object distance and instead uses the angle of view to control the irradiation angle.

Additionally, while the Kishimoto et al. patent mentions “(or the focal length)” when discussing control of the projection angle using the object distance, this type of control when used with optical and electronic zoom functions is discussed in the Background of the Invention section of the specification (see page 1, lines 15-25 and page 7, line 3 to page 8, line 3 of application as filed) with its attendant disadvantages which are intended to be overcome by the present invention. These disadvantages would also be present if this control were adapted to Maruyama patent, since this patent teaches maintaining the optical focal length “at the tele-end value” when switching from the optical to the electronic zoom.

Thus, the Maruyama patent and the Kishimoto et al. patent would simply not teach or suggest controlling the irradiation angle based on the view-angle scaling information when the

zoom lens has reached the telephoto limit or the wide-angle limit. Applicant's claims 10 and 11 which recite such features therefore patentably distinguish over these patents.

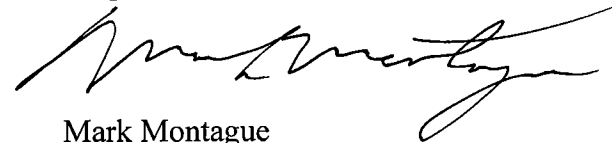
The Shimizu et al. reference, which was relied upon by the Examiner to reject applicant's claims 4 and 8, is concerned only with optical zoom and thus lacks any teaching pertinent to controlling the irradiation angle of a flash during an electronic zoom function of a camera.

As demonstrated above, applicant's claim 10, along with dependent claim 11, thus patentably distinguish over the cited art of record. Accordingly, the allowance of new claims 10 and 11 is respectfully requested.

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Respectfully submitted,



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